

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.14 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1. Facility Name and Mailing Address: Camp Upshur STP
Commander, MCB Quantico
c/o NREA (B046)
3250 Catlin Avenue
Quantico, VA 22134-5001
SIC Code : 4952 WWTP
Facility Location: MCB Quantico – Camp Upshur
County: Prince William
Facility Contact Name: Johnmark Sullivan, Water Program Manager
Telephone Number: 703-432-0539
Facility E-mail Address: Johnmark.sullivan@usmc.mil
2. Permit No.: VA0028371
Expiration Date of previous permit: 3/27/2016
Other VPDES Permits associated with this facility: VA0002151 (Industrial Storm Water VPDES Permit)
VA0028363 (Quantico Mainside WWTP)
VAR040069 (MS4 Permit)
Other Permits associated with this facility: Petroleum Registration Site 3021353
E2/E3/E4 Status: NA
3. Owner Name: U.S. Marine Corps – MCB Quantico
Owner Contact/Title: J.M. Murray, Colonel, USMC
Telephone Number: 703-784-5900
Owner E-mail Address: Joseph.m.murray@usmc.mil
4. Application Complete Date: 9/28/2015
Permit Drafted By: Anna Westernik
Date Drafted: 1/12/2016
Draft Permit Reviewed By: Doug Frasier
Date Reviewed: 1/14/2016
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: 1/22/2016
Public Comment Period : Start Date: 7/11/2016
End Date: 8/10/2016
5. Receiving Waters Information: At the discharge point, the receiving stream is an unnamed tributary of Cedar Run with intermittent flow. The flow frequency for intermittent streams is 0.00 MGD.
Receiving Stream Name : Cedar Run, UT
Stream Code: 1a-CER
Drainage Area at Outfall: 0.57 sq.mi.
River Mile: 0.04
Stream Basin: Potomac and Shenandoah
Subbasin: Potomac
Section: 7f
Stream Class: III
Special Standards: PWS, g
Waterbody ID: VAN-A18R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
30Q10 Low Flow: 0.0 MGD
30Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

☒ State Water Control Law
☒ Clean Water Act
☒ VPDES Permit Regulation
☒ EPA NPDES Regulation

☐ EPA Guidelines
☒ Water Quality Standards
☒ Other (Occoquan Policy, 9VAC25-410)

7. Licensed Operator Requirements: Class III

8. Reliability Class: Class I

9. Permit Characterization:

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input checked="" type="checkbox"/> Federal (FOTW)	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Whole Effluent Toxicity Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL	<input checked="" type="checkbox"/> e-DMR Participant	

10. Wastewater Sources and Treatment Description:

Influent discharging to the Federally Owned Treatment Works (FOTW) collection system from the Camp Upshur Area of the Quantico Marine Corps Base is comprised of municipal wastewater and truck wash wastewater. The collection system, primarily reconstructed in 2006, consists of approximately 1,092 linear feet of 8" gravity sanitary sewer main, 1,663 linear feet of 6" service connections, 1,800 linear feet of 6" force main, and 936 linear feet of 3" force main.

Influent from the collection system is pretreated at the headworks of the facility by an influent grinder and an auger screen. After screening, the flow enters a 45,000 gallon pre-equalization tank that serves to dampen the flow variations. The population at Camp Upshur can be as high as 2,200 for a two week period. However, the minimum camp occupancy is estimated at 20 personnel on a full-time basis.

Biological treatment in the form of nitrification and denitrification occurs in four sequencing batch reactors (SBRs).

Decanted effluent from the SBR units flows to a post-equalization tank that serves to normalize the flow to two filters. After filtration, flow is disinfected via a single channel ultraviolet (UV) disinfection system. Effluent flow is metered prior to post aeration. Discharge occurs via Outfall 001 to an intake point of an abandoned water treatment plant connected to an unnamed tributary of Cedar Run.

A Certificate to Operate (CTO) was issued for the new SBR treatment plant on December 2, 2015 (see **Attachment 1**). Actual operation of the SBR facility has not commenced.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1 – OUTFALL DESCRIPTION

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude/Longitude
001	Domestic Wastewater and Truck Wash Water	See Item 10 above.	0.14 MGD	38° 37' 23" N -77° 31' 45" W
See Attachment 3 for the Nokesville Topographic Map (DEQ #195a).				

11. Sludge Treatment and Disposal Methods:

Wasted sludge from the SBR units will be pumped to an aerobic digester on site for the reduction of volatile suspended solids. Sludge from the digester is taken to the Quantico Mainside Treatment Plant (VA0028363) for further stabilization. The combined sludge from the Camp Upshur STP and the Quantico Mainside WWTP is disposed of in the King George County Landfill.

12. Discharges into Waterbody VAN-A18R:

All discharges to this waterbody, with the exception of USMC – MCB Quantico, Camp Upshur and the MS4 Permit VAR040069 are Single Family Homes General Permits. These discharges are summarized in Table 2 below.

TABLE 2 -- DISCHARGES IN WATERBODY VAN-A18R		
Permit No	Facility	Receiving Stream
VAR040069	MS4 General Permit	Goslin Run
VAG406395	Shepard Bret Residence	Slate Run, UT
VAG406089	Wray John F Residence	Cedar Run, UT
VAG406013	Wright Wade J Residence	South Run, UT
VAG406409	Hull George Residence	Cedar Run, UT
VAG406388	Brown Kevin and Julie - Residence	Slate Run
VAG406544	Underwood Luke and Paula Residence	Cedar Run, UT
VAG406091	Kocinski Kenneth and Jennifer Residence	Cedar Run, UT
VAG406223	Hallan Patrick and Jennifer Residence	Cedar Run, UT
VAG406043	Craig Geraldine L Residence	Elk Run, UT
VAG406126	Philippy Steven J Residence	Slate Run, UT
VAG406480	Rambillas Ray Residence	Slate Run, UT
VAG406108	Tolson Patricia A Residence	Slate Run, UT
VAG406486	Edwards Matt and Tracy	Slate Run, UT
VAG406469	Asbury United Methodist Church - Nokesville	Cedar Run, UT
VAG406546	Haas David Residence	Slate Run, UT
VAG406427	Wallach Richard Residence	Slate Run, UT
VAG406354	Gough Jr Ransdall - Residence	Cedar Run, UT

13. Material Storage: This facility has just recently been placed on line. 165 gallons of caustic and 165 gallons of alum are planned to be stored on site.

14. Site Inspection: Not conducted. New facility.

15. Receiving Stream Water Quality and Water Quality Standards:**a. Ambient Water Quality Data**

This facility discharges to an unnamed tributary to Cedar Run that has been neither monitored nor assessed. Cedar Run is located approximately 190 feet downstream from Outfall 001. The monitoring stations for this segment of Cedar Run are located within a downstream segment of Cedar Run that begins approximately 0.07 miles downstream from Outfall 001: DEQ freshwater probabilistic monitoring station 1aCER005.02 is located approximately 1.9 miles downstream from Outfall 001 at Route 646 and ambient water quality monitoring station 1aCER006.00 is located approximately 3 miles downstream from Outfall 001 at Route 646. The following is the water quality summary for this segment of Cedar Run, as taken from the Draft 2014 Integrated Report:

Class III, Section 7f, Special Standards PWS and g.

DEQ monitoring stations located on this segment of Cedar Run:

- DEQ freshwater probabilistic monitoring station 1aCER005.02, downstream of Route 646
- Ambient water quality monitoring station 1aCER006.00, at Route 646

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for the Cedar Run watershed has been completed and approved. The aquatic life, public water supply, and wildlife uses are considered fully supporting. There was insufficient information to determine support for the fish consumption use.

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 3 – LISTED STREAM SEGMENTS AND TMDLS							
Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
<i>Impairment Information in the DRAFT 2014 Integrated Report*</i>							
Cedar Run	Recreation	<i>E. coli</i>	190 feet	Cedar Run and Licking Run Bacteria TMDL 07/06/2004	6.97E+10 cfu/100 ml <i>E. coli</i>	126 cfu/100 ml <i>E. coli</i> --- 0.040 MGD	---

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the draft 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories (wastewater, urban storm water, onsite/septic agriculture, air deposition). Fact Sheet Section 17.e provides additional information on specific nutrient monitoring for this facility to implement the provisions of the Chesapeake Bay TMDL.

The full planning statement is found in **Attachment 4**.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, an unnamed tributary of Cedar Run, is located within Section 7f of the Potomac and Shenandoah River Basin and is a Class III water.

Class III waters must achieve a D.O. of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C, and maintain a pH of 6.0-9.0 standard units (S.U.) at all times.

Some water quality criteria are dependent on the temperature and pH or total hardness of the receiving stream and/or the final effluent. These values were utilized to determine the criteria found in **Attachment 5** (Freshwater Water Quality Criteria/Wasteload Allocation Analysis) for the following pollutants:

1) pH and Temperature for Ammonia Criteria:

The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. Due to the low critical flow values, the effluent significantly impacts the instream values. Therefore, at these flows, the 90th percentile temperature and pH values are normally used to determine the ammonia criteria for the receiving stream because they best represent the critical conditions of the receiving stream.

However, the treatment works has been replaced with a plant having dissimilar treatment capabilities. Therefore, default temperature values of 25°C (low flow period) and 15° C (high flow period) and a default pH value of 8.0 S.U. were the 90th percentile temperature and pH values used to calculate the ammonia water quality criteria for this permit reissuance. These same pH and temperature values were used in the previous reissuance to calculate ammonia criteria.

2) Total Hardness for Hardness-Dependent Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream and/or effluent total hardness values (expressed as mg/L calcium carbonate). In the case of this facility, hardness data would be based upon effluent data since

the critical flow of the receiving stream is zero. Since the newly-constructed sewage treatment plant has not been put into operation, there is no relevant effluent hardness data. Per DEQ guidance, a default hardness value of 50 mg/L CaCO₃ for streams east of the Blue Ridge was used to calculate hardness-dependent metals criteria.

3) Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Geometric Mean ¹
Freshwater <i>E. coli</i> (N/100 mL)	126

¹For a minimum of four weekly samples taken during any calendar month

All water quality criteria applicable to the receiving stream are detailed in **Attachment 5**.

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, an unnamed tributary of Cedar Run, is located within Section 7f of the Potomac and Shenandoah River Basin. This section has been designated with special standards of PWS and g.

Special Standard "g" refers to the Occoquan Watershed policy at 9VAC25-410. The regulation sets stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. The regulation generally prohibits new sewage treatment plants and only allows minor industrial discharges.

The BOD₅ and TSS concentrations are taken from the NPDES permit issued for the original existing sewage treatment plant (circa 1950) on April 22, 1975 by EPA. At the time of issuance of the 1975 permit, this facility was considered to have a design flow of 0.14 MGD. Therefore, 0.14 MGD is considered to be the baseline flow of the facility. The current BOD₅ and TSS limits comply with the Occoquan Policy at 9VAC25-410-30 and have not shown to contribute to degradation of water quality in the receiving stream.

Special Standard PWS designates a public water supply intake. The Board's Water Quality Standards establish numerical standards for specific parameters calculated to protect human health from toxic effects through drinking water and fish consumption. See 9VAC25-260-140 B for applicable criteria. Although the discharge is to an area with an abandoned water treatment plant, the PWS standard is still applicable and will not be proposed for removal in the current triennial review.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on an evaluation of the critical stream flows. The drainage area above the discharge point is 0.57 square miles; the 7Q10 is 0.0 MGD. During critical flow periods, the design flow discharge volume from the sewage treatment plant is much greater than the flow in the stream. It is staff's best professional opinion that the instream waste concentration is almost 100% during critical stream flows, and the water quality of the stream will mirror the quality of the effluent. Permit limits proposed in this reissuance have been established by determining wasteload allocations that will result in attaining and/or maintaining all water quality criteria applicable to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data

represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent and the Wasteload Allocations (WLAs) are calculated. Since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. In the case of ammonia evaluations, limits are needed if the 97th percentile of the thirty-day average effluent concentration values is greater than the chronic WLA. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a. Effluent Screening:

Effluent data was not reviewed for this permit reissuance because the treatment plant has been replaced. This measurable change in treatment capability will change the nature of the pollutant discharge.

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent. Since this is a sewage treatment plant, a wasteload allocation (WLA) analysis for ammonia is required. UV disinfection is being used; therefore, total residual chlorine will not be evaluated.

b. Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{Co [Qe + (f) (Qs)] - [(Cs) (f) (Qs)]}{Qe}$$

Where:	WLA	= Wasteload allocation
	Co	= In-stream water quality criteria
	Qe	= Design flow
	Qs	= Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
	f	= Decimal fraction of critical flow
	Cs	= Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have critical flows (1Q10, 7Q10, 30Q10) of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the Co.

c. Effluent Limitations Toxic Pollutants, Outfall 001:

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

The pH and temperature values used to derive ammonia criteria and subsequent ammonia limits are the same as that used in the previous permit reissuance. Recalculation of the ammonia criteria and limits results in monthly and weekly average limits of 1.4 mg/L and 1.8 mg/L, respectively. The monthly and weekly average ammonia limits were 1.5 mg/L and 2.1 mg/L, respectively in the previous permit reissuance (see Attachment 6). The recalculated ammonia limits of 1.4 mg/L monthly average and 1.8 mg/L weekly average shall be placed in this permit.

The Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent limitations. It is staff's best professional judgment that incorporation of these criteria into the Virginia Water Quality Standards is forthcoming. This facility and others may be required to comply with new criteria in this permit term or during their next permit term.

2) Metals:

The 2011 permit reissuance for the Camp Upshur STP has a Total Recoverable Copper limit of 26 µg/L and a Total Recoverable Nickel limit of 58 µg/L at the 0.14 MGD design flow tier. Copper is frequently discharged to the collection system of this FOTW (see **Attachment 7**). Because, the new treatment plant has not been used, relevant data is not available to calculate reasonable potential. The Total Recoverable Copper limit of 26 µg/L and the Total Recoverable Nickel limit of 58 µg/L shall remain in this permit until reasonable potential analysis for Total Recoverable Copper and Total Recoverable Nickel are conducted within one year of the permit reissuance date. At that time, all water quality data shall have been submitted to DEQ for evaluation (see Part I.C.7 of the permit).

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants:

No changes to D.O., biochemical oxygen demand-5 day (BOD₅), total suspended solids (TSS), pH, and *E. coli* limitations are proposed.

The BOD₅ and TSS concentrations are taken from the NPDES permit issued on April 22, 1975 by EPA. TSS limits are established to equal BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set to meet the water quality criteria.

E. coli limitations are established in accordance with the Water Quality Standards at 9VAC25-260-170 and the Bacteria TMDL for Cedar Run.

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients:

Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorus (TP), and Sediments under the Total Maximum Daily Load (TMDL) for the Chesapeake Bay. Monitoring for TN, TP and TSS is required in order to verify the aggregate wasteload allocations. This facility is currently required to monitor TSS three days per week. Monitoring for the nitrogen components (TKN and Nitrate+Nitrite), TN, and TP will be required annually.

f. Effluent Limitations and Monitoring Summary:

The effluent limitations are presented in the following table. Limits were established for BOD₅, TSS, Ammonia as N, pH, D.O., *E. coli* bacteria, Total Recoverable Copper, and Total Recoverable Nickel. Monitoring is required for total hardness and nutrients (see Section 17.e of this fact sheet).

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the current VPDES Permit Manual.

The VPDES Permit Regulation at 9 VAC 25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

The design flow is 0.14 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD) ^a	NA	NL	NA	NA	NL	Continuous	TIRE
pH	1	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅ ^b	1	10 mg/L 5.3 kg/day	15 mg/L 8.0 kg/day	NA	NA	3D/W	8-HC
Total Suspended Solids (TSS) ^{b, c}	2	10 mg/L 5.3 kg/day	15 mg/L 8.0 kg/day	NA	NA	3D/W	8-HC
Dissolved Oxygen (D.O.)	1	NA	NA	5.0 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	1	1.4 mg/L	1.8 mg/L	NA	NA	3D/W	8-HC
<i>E. coli</i> (Geometric Mean) ^d	1, 4	126 n/100ml	NA	NA	NA	3D/W	Grab
Total Recoverable Copper ^e	1	26 µg/L	26 µg/L	NA	NA	1/M	Grab
Total Recoverable Nickel ^e	1	58 µg/L	58 µg/L	NA	NA	1/M	Grab
Total Hardness ^e	2	NL mg/L	NL mg/L	NA	NA	1/M	Grab
Nitrate+Nitrite, as N	3	NL mg/L	NA	NA	NA	1/YR	8-HC
Total Kjeldahl Nitrogen (TKN)	3	NL mg/L	NA	NA	NA	1/YR	8-HC
Total Nitrogen ^{f, g}	3	NL mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus ^f	3	NL mg/L	NA	NA	NA	1/YR	8-HC

The basis for the limitations codes are:

MGD = Million gallons per day.

1/D = Once every day.

1. Water Quality Standards

NA = Not applicable.

3D/W = Three days a week.

2. Best Professional Judgment

NL = No limit; monitor and report.

1/M = Once every month.

3. Guidance Memo No. 14-2011 (Nutrient Monitoring for "Nonsignificant" Discharges to the Chesapeake Bay Watershed.

TIRE = Totalizing, indicating and recording equipment.

1/YR = Once every calendar year.

S.U. = Standard units.

4. Cedar and Licking Run TMDL

8-HC= A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum of eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab= An individual sample collected over a period of time not to exceed 15 minutes.

a. See Part I.C.12 of the permit.

b. At least 85% removal for BOD₅ and TSS shall be attained.

c. TSS shall be expressed as two significant figures.

d. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

e. Copper, nickel, and hardness monitoring shall be conducted simultaneously.

f. Nonsignificant dischargers are subject to aggregate wasteload allocations for TN, TP, and sediments under the Total Maximum Daily Load (TMDL) for Chesapeake Bay. Monitoring of TN and TP is required in order to verify the aggregate wasteload allocations.

g. Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests.

20. Other Permit Requirements:

Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

- a. **95% Capacity Reopener.** The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a FOTW that would be subject to these requirements.
- b. **Indirect Dischargers** Per the VPDES Permit Regulation at 9VAC25-31-280.B.9, this sewage treatment plant shall submit an Industrial User Survey. This report will be due one year from the effective date of the permit.
- c. **O&M Manual Requirement.** Required by the Code of Virginia at §62.1-44.19; the Sewage Collection and Treatment Regulations at 9VAC25-790; and the VPDES Permit Regulation at 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d. **CTC, CTO Requirement.** The Code of Virginia at § 62.1-44.19 and the Sewage Collection and Treatment Regulations at 9VAC25-790 require that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e. **Licensed Operator Requirement.** The Code of Virginia at §54.1-2300 et seq., the VPDES Permit Regulation at 9VAC25-31-200 C, and the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations at 18VAC160-20-10 et seq. requires licensure of operators. This facility requires a Class III operator.
- f. **Reliability Class.** The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a Reliability Class of I based on the requirements of the Occoquan Policy at 9VAC25-410.
- g. **Water Quality Criteria Monitoring.** State Water Control Law at §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems or the attainment of water quality goals according to 40 CFR Part 131, Water Quality Standards, Subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit. The data is to be submitted to DEQ-NRO within one year of the permit reissuance date.
- h. **Water Quality Criteria Reopener.** The VPDES Permit Regulation at 9VAC25-31-220.D requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.
- i. **Sludge Reopener.** The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA.

- j. **Sludge Use and Disposal.** The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720 and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- k. **Nutrient Reopener.** 9VAC25-40-70.A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390.A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- l. **Effluent Monitoring Frequencies.** The following sampling frequencies shall apply as described below

Actual Plant Influent Flow (MGD)	Parameters	Frequency	Sample Type
Less than or equal to 0.04 MGD	BOD5, TSS, Ammonia	Once per month (1/M)	Grab
	<i>E. coli</i>	Once per week (1/W)	Grab
Greater than 0.04 and less than 0.1 MGD	BOD5, TSS, Ammonia	Once per week (1/W)	4-HC
	<i>E. coli</i>	Twice per week (2/W)	4-HC

The sampling frequencies defined above are based on monthly average flow. Should the monthly average flow exceed the defined threshold category for any three (3) consecutive months, the permittee shall commence the monitoring frequencies of the next higher threshold category established above. Once actual monthly average flows exceed 0.1 MGD for three consecutive months, the reduced monitoring frequencies above shall cease and the monitoring frequencies specified in Part I.A shall apply.

In addition, if the facility permitted herein is issued a Warning Letter, a Notice of Violation, or is subject to an active enforcement action related to effluent limitation violations for any of the parameters listed in the table above, the monitoring frequencies contained in Part I.A shall be reinstated and shall remain in effect for a period of at least six (6) months upon written notification from DEQ. If influent flow is too low and discharge does not occur, the permittee shall state "No Discharge" on the DMR. If the facility remains in compliance during the aforementioned period of at least six (6) months, the permittee may submit a written request reinstating a reduced monitoring frequency.

- m. **TMDL Reopener.** This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:

- 1) The Nutrient Reopener Special Condition has been added to this permit.
- 2) The Water Quality Monitoring and Water Quality Reopener Special Conditions have been added to this permit.
- 3) The Effluent Monitoring Frequencies Special Condition has been added to this permit.

b. Monitoring and Effluent Limitations:

- 1) The Ammonia as N limits have been changed from 1.5 mg/L monthly average and 2.1 mg/L weekly average to 1.4 mg/L monthly average and 1.8 mg/L weekly average.
- 2) Total Residual Chlorine limits have been removed since UV disinfection has replaced chlorine disinfection.
- 3) The requirement for nutrient monitoring has been added to this permit to verify the aggregate wasteload allocations.
- 4) The requirement for Attachment A monitoring has been added to this permit.

c. Other:

- 1) The 0.04 MGD and the 0.07 MGD flow tiers have been removed from the permit concurrent with the treatment plant upgrade completed in December 2015.
- 2) The requirement to submit an Industrial User Survey has been added to this permit.

24. Variances/Alternate Limits or Conditions:

None

25. Public Notice Information:

First Public Notice Date: 7/11/2016

Second Public Notice Date: 7/18/2016

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3837, anna.westernik@deq.virginia.gov. See **Attachment 8** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

- 1) Previous Board Action(s): None.
- 2) Staff Comments: None
- 3) Public Comment: State: No comments were received during the public notice period.

ATTACHMENTS

Attachment 1	December 2, 2015 CTO for the SBR Plant
Attachment 2	Facility Schematic
Attachment 3	Nokesville Topographic Map (DEQ #195a)
Attachment 4	Planning Statement
Attachment 5	Water Quality Criteria/WLA Spreadsheet
Attachment 6	Reasonable Potential Analysis for Ammonia
Attachment 7	Summary of Total Recoverable Copper and Total Recoverable Nickel Limits Reported on DMRs from April 2011 to November 2015
Attachment 8	Public Notice



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

Molly Joseph Ward
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3821
www.deq.virginia.gov

David K. Paylor
Director

Thomas A. Faha
Regional Director

December 2, 2015

Prince William County
P-543 WWTP Camp Upshur, Quantico, Virginia
PTL#26368, VA0028371

Via E-mail (joseph.m.murray@usmc.mil)

Col. Joseph M. Murray
Commanding Officer, MCB Quantico
US Marine Corps Base Quantico
3250 Catlin Ave
Quantico, VA 22134

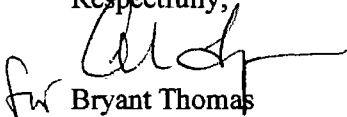
Dear Col. Murray:

In accordance with 9VAC25-790-190 of the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*, this letter transmits the Certificate to Operate (CTO) for P-543 WWTP Camp Upshur, Quantico, Virginia, located in Prince William County. The CTO is being issued based on the Application for Certificate to Operate dated August 26, 2015, and received by this office on September 23, 2015 with revisions submitted December 2, 2015.

If you have any questions regarding reporting in eDMR, please contact Rebecca Vice; she can be reached at (703) 583-3922 or by e-mail at Rebecca.Vice@deq.virginia.gov.

If you have any questions about this letter or the approval process, please contact Alison Thompson at (703)-583-3834 or alison.thompson@deq.virginia.gov.

Respectfully,



Bryant Thomas
Water Permit & Planning Manager

cc: VA0028371
VDH District Office, attn: Environmental Health Manager
Prince William County Local Building Official
Robert J. Russina (robert.russina@jacobs.com)


Attachment: CTO

Attachment 1

Department of Environmental Quality
APPLICATION for CERTIFICATE TO OPERATE

Under the Sewage Collection and Treatment Regulations 9 VAC 25-790
and/or the Water Reclamation and Reuse Regulation 9 VAC 25-740

See Instructions. Submit 1 copy of this form and any attachments. Form will expand as you enter information.

Project Title: (as it appears on plans) P-543 Wastewater Treatment Plant Camp Upshur, Quantico, Virginia	
P.E. Seal Date on Cover: 4/27/2012	
Specifications Title and Date: Specifications and Submittal Status Log (Final Design) May 2, 2012	
Location of Project: Camp Upshur, Quantico, Virginia	County/City: Prince William County
Receiving Wastewater Collection System(s): Camp Upshur Collection	
Receiving Sewage Treatment Plant(s): Camp Upshur STP	
PROJECT OWNER: Commanding Officer, MCB Quantico	RESPONSIBLE ENGINEER
Owner Contact Name: Col. Joseph M. Murray	Name: Robert J. Russina, P.E.
Title: Commanding Officer	Company Name: Jacobs Engineering, Inc.
Address: US Marine Corps Base Quantico 3250 Catlin Avenue Quantico, VA 22134	Address: 501 N. Broadway St. Louis, Missouri 63102-2131
Phone: 703.784.5900	Phone: 314.335.4440
Email: joseph.m.murray@usmc.mil	Email: robert.russina@jacobs.com
Owner Signature and Date:  1 DEC 15	

PTL NUMBER FROM CERTIFICATE TO CONSTRUCT: 25693

Attach Copy of the original Certificate to Construct if issued prior to November 9, 2008. If applicable, provide verification of compliance with any conditions in the Certificate to Construct.

Design Flow: (a) average daily flow (MGD): 0.14 (b) peak flow (MGD): 0.504

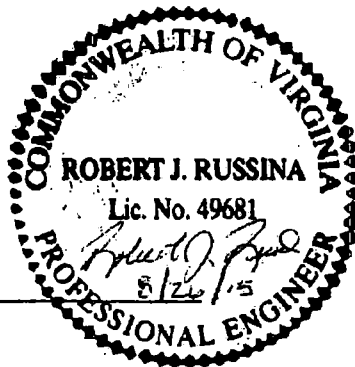
For sewage treatment plant, water reclamation or satellite reclamation projects, provide the VPDES/VPA Permit Number:
VA0028371

Is a new Discharge Monitoring Report (DMR) or other monthly monitoring report required? Yes ☐ No ☒
For Pump Stations, Sewage Treatment Plants, and Reclamation Systems, check Reliability Class: I ☒ II ☐ III ☐ NA ☐

Two options are provided for the Statement of Completion, depending on whether the project is being authorized under the Sewage Collection and Treatment Regulations, the Water Reclamation and Reuse Regulations, or BOTH. Please check the appropriate box and then provide signature and seal below as indicated.

X The following statement of completion for issuance of a Certificate to Operate under the Sewage Collection and Treatment Regulations must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

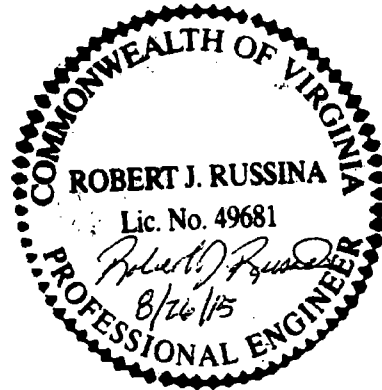
"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-790-180.B, and inspections have been performed to make this statement in accordance with Section 9 VAC 25-790-180.C.1 of the Sewage Collection and Treatment Regulations."



Licensed Engineer's Signature and original seal (signed and dated)

- X The following statement of completion for issuance of a Certificate to Operate under the Water Reclamation and Reuse Regulation must be signed and sealed by the responsible engineer. (DEQ will not conduct a confirming inspection.)

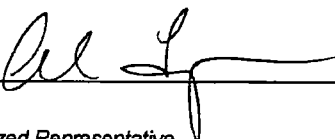
"The construction of the project has been completed in accordance with the referenced plans and specifications or revised only in accordance with 9 VAC 25-740-120-B.2.b. and inspections have been performed to make this statement in accordance with Section 9 VAC 25-40-120.B.3.a. of the Water Reclamation and Reuse Regulations."



Licensed Engineer's Signature and original seal (signed and dated)

For DEQ use only:

In accordance with *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this form, signed by the appropriate DEQ representative, serves as the **Certificate to Operate** for the referenced project.

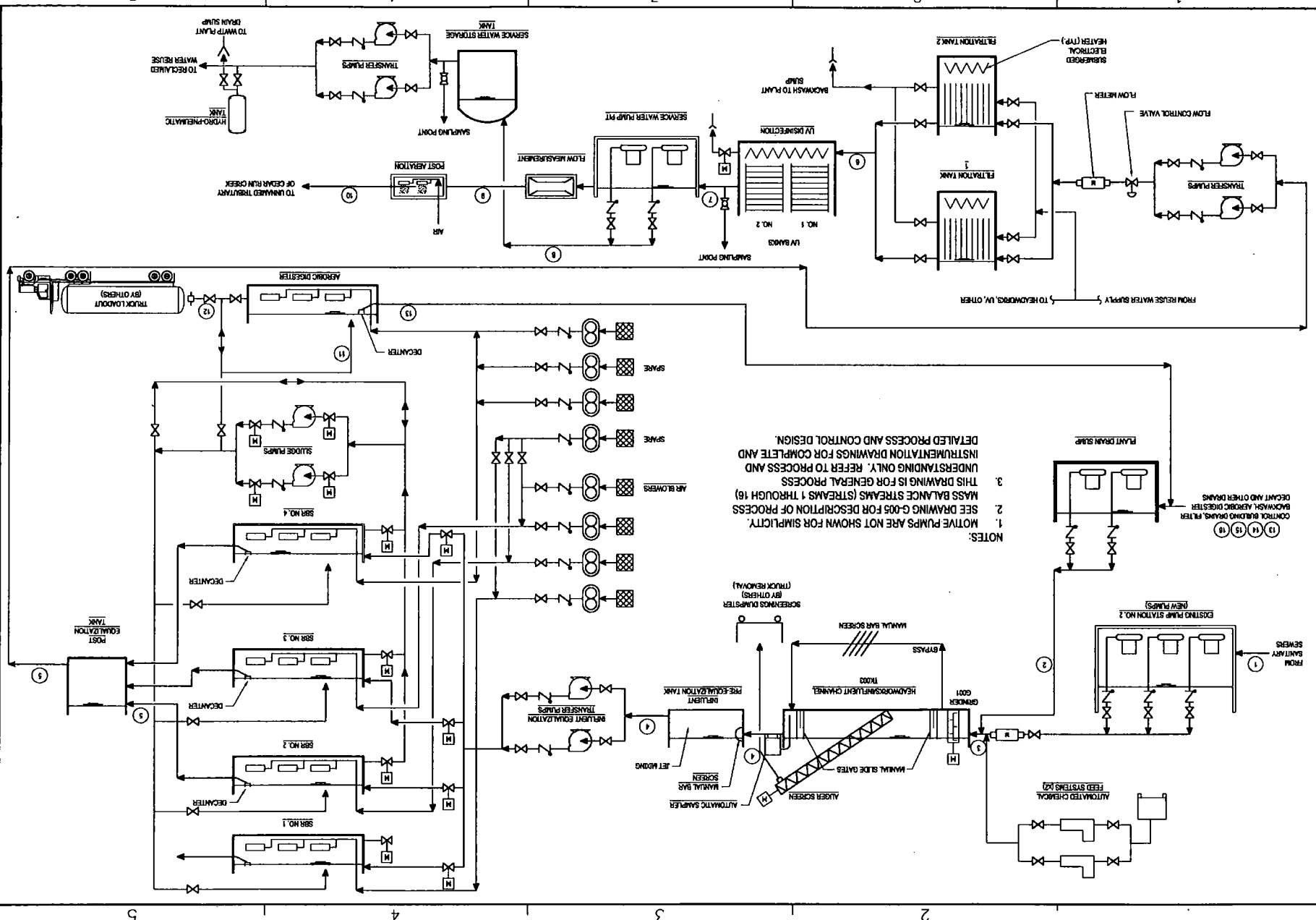
Alison Thompson		12/2/15	26368
Name	Signature	Date	CTO PTL Number

Department of Environmental Quality Authorized Representative

An Operation and Maintenance Manual must be submitted to the DEQ Regional Office in accordance with 9 VAC 25-790 for sewage treatment plants, 9 VAC 25-740 for water reclamation systems and satellite reclamation systems and VPDES or VPA permit requirements.

For pump stations, an Operation and Maintenance Manual must be maintained for the facility in accordance with 9 VAC 25-790, but is NOT to be submitted to DEQ. The pump station must be operated and maintained in accordance with that manual.

FILED: C:\pwworking\jacob\dwg\05271717.dwg (17/04/2005 11:02:05) USER: jacob VIEWS: none PLLOTS: none PLOT DATE: 15/04/2005 11:02:05



NOTES:
 1. MOVIE PUMPS ARE NOT SHOWN FOR SIMPLICITY.
 2. SEE DRAWING G-005 FOR DESCRIPTION OF PROCESS MASS BALANCE STREAMS (STREAMS 1 THROUGH 16).
 3. THIS DRAWING IS FOR GENERAL PROCESS UNDERSTANDING ONLY. REFER TO PROCESS AND INSTRUMENTATION DRAWINGS FOR COMPLETE AND DETAILED PROCESS AND CONTROL DESIGN.

REVISIONS

NO.	DATE	BY	CHKD.	DESCRIPTION
1	11/04/2005	JAC	WAC	ISSUED FOR CONSTRUCTION

PROJECT INFORMATION

PROJECT NO. 05271717
 SHEET NO. 11-0-0491
 PROJECT NAME: P-543 WASTEWATER TREATMENT PLANT
 CAMP UPSTAIR

DESIGNER

JACOBS ENGINEERING GROUP, INC.
 10000 WEST 11TH AVENUE, SUITE 100
 DENVER, CO 80231

CLIENT

U.S. NAVY
 NAVAL FACILITIES ENGINEERING COMMAND
 10000 WEST 11TH AVENUE, SUITE 100
 DENVER, CO 80231

SCALE

AS NOTED

PROJECT NO.

05271717

SHEET NO.

11-0-0491

PROJECT NAME

P-543 WASTEWATER TREATMENT PLANT
 CAMP UPSTAIR

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SCALE

AS NOTED

PROJECT NO.

05271717

SHEET NO.

11-0-0491

PROJECT NAME

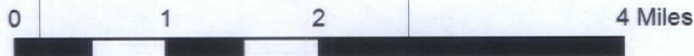
P-543 WASTEWATER TREATMENT PLANT
 CAMP UPSTAIR

Attachment 2



The information contained in this map is for reference only and is not certified to be absolutely complete or correct.

January 7, 2016 RMS



To: Anna Westernik
From: Rebecca Shoemaker
Date: February 4, 2016
Subject: Planning Statement for USMC – MCB Quantico, Camp Upshur
Permit Number: VA0028371

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.14
Receiving Stream: Cedar Run, UT
Outfall 001 Latitude / Longitude: 38° 37' 23" -77° 31' 45"
Rivermile Outfall 001: 0.04
Streamcode: 1a-CER
Waterbody: VAN-A18R
Special Standards: Class III, Section 7f, special stds. PWS, g
Drainage Area Outfall 001: 0.57 mi²

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges to an unnamed tributary to Cedar Run that has been neither monitored nor assessed. Cedar Run is located approximately 190 feet downstream from Outfall 001. The monitoring stations for this segment of Cedar Run are located within a downstream segment of Cedar Run that begins approximately 0.07 miles downstream from Outfall 001: DEQ freshwater probabilistic monitoring station 1aCER005.02 is located approximately 1.9 miles downstream from Outfall 001 at Route 646 and ambient water quality monitoring station 1aCER006.00 is located approximately 3 miles downstream from Outfall 001 at Route 646. The following is the water quality summary for this segment of Cedar Run, as taken from the Draft 2014 Integrated Report:

Class III, Section 7f, special stds. PWS, g.

DEQ monitoring stations located on this segment of Cedar Run:

- *DEQ freshwater probabilistic monitoring station 1aCER005.02, downstream of Route 646*
- *ambient water quality monitoring station 1aCER006.00, at Route 646*

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for the Cedar Run watershed has been completed and approved. The aquatic life, public water supply, and wildlife uses are considered fully supporting. There was insufficient information to determine support for the fish consumption use.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

No.

3. Are there any downstream 303(d) listed impairments within 15 miles of this facility that are relevant to this discharge?
If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the DRAFT 2014 Integrated Report							
Cedar Run	Recreation	<i>E. coli</i>	190 feet	Cedar Run and Licking Run Bacteria TMDL 07/06/2004	2.44E+11 cfu/100 ml <i>E. coli</i> *	126 cfu/100 ml <i>E. coli</i> --- 0.140 MGD	---

*The Waste Load Allocation has been updated and is based on the design flow of 0.140 MGD that has been applicable since the 2015 CTO. The Cedar Run and Licking Run TMDL included future growth scenarios to determine the effect of possible expansion by facilities within the watershed. Discharge from permitted point sources was increased by five times the permit levels that existed at the time of TMDL development. The modeling showed that the increases did not result in exceedances of the water quality standard. In addition, the bacteria loadings from this facility's increase of 0.100 MGD amount to 0.218% of the TMDL allocation for the Cedar Run watershed. Finally, the permit for this facility will ensure the discharge meets the water quality criteria for *E. coli* bacteria at the end-of-pipe. The assignment of the updated WLA to this facility based upon the 0.140 MGD design flow is consistent with the assumptions and requirements of the Cedar Run and Licking Run Bacteria TMDL and requirements of DEQ Guidance Memo 14-2015.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within five miles of this discharge.

6. Since the outfall location has moved, could you verify the drainage area?

The updated drainage area is 0.57 mi².

7. The discharge area was previously designated with a PWS Special Standard. Could you verify this is still accurate?
See attachment.

The PWS Special Standard is still applicable; it will not be proposed for removal in the current triennial review.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Attachment 5

Facility Name: Camp Upshur STP

Permit No.: VA0028371

Receiving Stream: Cedar Run, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	8 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.14 MGD
Public Water Supply (PWS) Y/N? =	y	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	6.7E+02	9.9E+02	--	--	6.7E+02	9.9E+02	--	--	--	--	--	--	--	--	--	--	6.7E+02	9.9E+02
Acrolein	0	--	--	6.1E+00	9.3E+00	--	--	6.1E+00	9.3E+00	--	--	--	--	--	--	--	--	--	--	6.1E+00	9.3E+00
Acrylonitrile ^C	0	--	--	5.1E-01	2.5E+00	--	--	5.1E-01	2.5E+00	--	--	--	--	--	--	--	--	--	--	5.1E-01	2.5E+00
Aldrin ^C	0	3.0E+00	--	4.9E-04	5.0E-04	3.0E+00	--	4.9E-04	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	4.9E-04	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	1.24E+00	--	--	8.41E+00	1.24E+00	--	--	--	--	--	--	--	--	--	--	8.41E+00	1.24E+00	--	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	2.36E+00	--	--	8.41E+00	2.36E+00	--	--	--	--	--	--	--	--	--	--	8.41E+00	2.36E+00	--	--
Anthracene	0	--	--	8.3E+03	4.0E+04	--	--	8.3E+03	4.0E+04	--	--	--	--	--	--	--	--	--	--	8.3E+03	4.0E+04
Antimony	0	--	--	5.6E+00	6.4E+02	--	--	5.6E+00	6.4E+02	--	--	--	--	--	--	--	--	--	--	5.6E+00	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	1.0E+01	--	3.4E+02	1.5E+02	1.0E+01	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	1.0E+01	--
Barium	0	--	--	2.0E+03	--	--	--	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	2.0E+03	--
Benzene ^C	0	--	--	2.2E+01	5.1E+02	--	--	2.2E+01	5.1E+02	--	--	--	--	--	--	--	--	--	--	2.2E+01	5.1E+02
Benzidine ^C	0	--	--	8.6E-04	2.0E-03	--	--	8.6E-04	2.0E-03	--	--	--	--	--	--	--	--	--	--	8.6E-04	2.0E-03
Benzo (a) anthracene ^C	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (b) fluoranthene ^C	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (k) fluoranthene ^C	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Benzo (a) pyrene ^C	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Bis(2-Chloroethyl) Ether ^C	0	--	--	3.0E-01	5.3E+00	--	--	3.0E-01	5.3E+00	--	--	--	--	--	--	--	--	--	--	3.0E-01	5.3E+00
Bis(2-Chloroisopropyl) Ether	0	--	--	1.4E+03	6.5E+04	--	--	1.4E+03	6.5E+04	--	--	--	--	--	--	--	--	--	--	1.4E+03	6.5E+04
Bis(2-Ethylhexyl) Phthalate ^C	0	--	--	1.2E+01	2.2E+01	--	--	1.2E+01	2.2E+01	--	--	--	--	--	--	--	--	--	--	1.2E+01	2.2E+01
Bromoform ^C	0	--	--	4.3E+01	1.4E+03	--	--	4.3E+01	1.4E+03	--	--	--	--	--	--	--	--	--	--	4.3E+01	1.4E+03
Butylbenzylphthalate	0	--	--	1.5E+03	1.9E+03	--	--	1.5E+03	1.9E+03	--	--	--	--	--	--	--	--	--	--	1.5E+03	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	5.0E+00	--	1.8E+00	6.6E-01	5.0E+00	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	5.0E+00	--
Carbon Tetrachloride ^C	0	--	--	2.3E+00	1.6E+01	--	--	2.3E+00	1.6E+01	--	--	--	--	--	--	--	--	--	--	2.3E+00	1.6E+01
Chlordane ^C	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	2.4E+00	4.3E-03	8.0E-03	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	8.0E-03	8.1E-03
Chloride	0	8.6E+05	2.3E+05	2.5E+05	--	8.6E+05	2.3E+05	2.5E+05	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	2.5E+05	--
TRC	0	1.9E+01	1.1E+01	--	--	1.9E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	--	--
Chlorobenzene	0	--	--	1.3E+02	1.6E+03	--	--	1.3E+02	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.6E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^c	0	--	--	4.0E+00	1.3E+02	--	--	4.0E+00	1.3E+02	--	--	--	--	--	--	--	--	--	--	4.0E+00	1.3E+02
Chloroform	0	--	--	3.4E+02	1.1E+04	--	--	3.4E+02	1.1E+04	--	--	--	--	--	--	--	--	--	--	3.4E+02	1.1E+04
2-Chloronaphthalene	0	--	--	1.0E+03	1.6E+03	--	--	1.0E+03	1.6E+03	--	--	--	--	--	--	--	--	--	--	1.0E+03	1.6E+03
2-Chlorophenol	0	--	--	8.1E+01	1.5E+02	--	--	8.1E+01	1.5E+02	--	--	--	--	--	--	--	--	--	--	8.1E+01	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	--	--	8.3E-02	4.1E-02	--	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	--	--
Chromium III	0	3.2E+02	4.2E+01	--	--	3.2E+02	4.2E+01	--	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	--	--
Chromium VI	0	1.6E+01	1.1E+01	--	--	1.6E+01	1.1E+01	--	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	--	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
Chrysene ^c	0	--	--	3.8E-03	1.8E-02	--	--	3.8E-03	1.8E-02	--	--	--	--	--	--	--	--	--	--	3.8E-03	1.8E-02
Copper	0	7.0E+00	5.0E+00	1.3E+03	--	7.0E+00	5.0E+00	1.3E+03	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	1.3E+03	--
Cyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	2.2E+01	5.2E+00	1.4E+02	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	1.4E+02	1.6E+04
DDD ^c	0	--	--	3.1E-03	3.1E-03	--	--	3.1E-03	3.1E-03	--	--	--	--	--	--	--	--	--	--	3.1E-03	3.1E-03
DDE ^c	0	--	--	2.2E-03	2.2E-03	--	--	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	--	--	2.2E-03	2.2E-03
DDT ^c	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	1.1E+00	1.0E-03	2.2E-03	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	2.2E-03	2.2E-03
Demeton	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Diazinon	0	1.7E-01	1.7E-01	--	--	1.7E-01	1.7E-01	--	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	--	--
Dibenz(a,h)anthracene ^c	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
1,2-Dichlorobenzene	0	--	--	4.2E+02	1.3E+03	--	--	4.2E+02	1.3E+03	--	--	--	--	--	--	--	--	--	--	4.2E+02	1.3E+03
1,3-Dichlorobenzene	0	--	--	3.2E+02	9.6E+02	--	--	3.2E+02	9.6E+02	--	--	--	--	--	--	--	--	--	--	3.2E+02	9.6E+02
1,4-Dichlorobenzene	0	--	--	6.3E+01	1.9E+02	--	--	6.3E+01	1.9E+02	--	--	--	--	--	--	--	--	--	--	6.3E+01	1.9E+02
3,3-Dichlorobenzidine ^c	0	--	--	2.1E-01	2.8E-01	--	--	2.1E-01	2.8E-01	--	--	--	--	--	--	--	--	--	--	2.1E-01	2.8E-01
Dichlorobromomethane ^c	0	--	--	5.5E+00	1.7E+02	--	--	5.5E+00	1.7E+02	--	--	--	--	--	--	--	--	--	--	5.5E+00	1.7E+02
1,2-Dichloroethane ^c	0	--	--	3.8E+00	3.7E+02	--	--	3.8E+00	3.7E+02	--	--	--	--	--	--	--	--	--	--	3.8E+00	3.7E+02
1,1-Dichloroethylene	0	--	--	3.3E+02	7.1E+03	--	--	3.3E+02	7.1E+03	--	--	--	--	--	--	--	--	--	--	3.3E+02	7.1E+03
1,2-trans-dichloroethylene	0	--	--	1.4E+02	1.0E+04	--	--	1.4E+02	1.0E+04	--	--	--	--	--	--	--	--	--	--	1.4E+02	1.0E+04
2,4-Dichlorophenol	0	--	--	7.7E+01	2.9E+02	--	--	7.7E+01	2.9E+02	--	--	--	--	--	--	--	--	--	--	7.7E+01	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	1.0E+02	--	--	--	1.0E+02	--	--	--	--	--	--	--	--	--	--	--	1.0E+02	--
1,2-Dichloropropane ^c	0	--	--	5.0E+00	1.5E+02	--	--	5.0E+00	1.5E+02	--	--	--	--	--	--	--	--	--	--	5.0E+00	1.5E+02
1,3-Dichloropropene ^c	0	--	--	3.4E+00	2.1E+02	--	--	3.4E+00	2.1E+02	--	--	--	--	--	--	--	--	--	--	3.4E+00	2.1E+02
Dieldrin ^c	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	2.4E-01	5.6E-02	5.2E-04	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	5.2E-04	5.4E-04
Diethyl Phthalate	0	--	--	1.7E+04	4.4E+04	--	--	1.7E+04	4.4E+04	--	--	--	--	--	--	--	--	--	--	1.7E+04	4.4E+04
2,4-Dimethylphenol	0	--	--	3.8E+02	8.5E+02	--	--	3.8E+02	8.5E+02	--	--	--	--	--	--	--	--	--	--	3.8E+02	8.5E+02
Dimethyl Phthalate	0	--	--	2.7E+05	1.1E+06	--	--	2.7E+05	1.1E+06	--	--	--	--	--	--	--	--	--	--	2.7E+05	1.1E+06
Di-n-Butyl Phthalate	0	--	--	2.0E+03	4.5E+03	--	--	2.0E+03	4.5E+03	--	--	--	--	--	--	--	--	--	--	2.0E+03	4.5E+03
2,4-Dinitrophenol	0	--	--	6.9E+01	5.3E+03	--	--	6.9E+01	5.3E+03	--	--	--	--	--	--	--	--	--	--	6.9E+01	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	1.3E+01	2.8E+02	--	--	1.3E+01	2.8E+02	--	--	--	--	--	--	--	--	--	--	1.3E+01	2.8E+02
2,4-Dinitrotoluene ^c	0	--	--	1.1E+00	3.4E+01	--	--	1.1E+00	3.4E+01	--	--	--	--	--	--	--	--	--	--	1.1E+00	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	5.0E-08	5.1E-08	--	--	5.0E-08	5.1E-08	--	--	--	--	--	--	--	--	--	--	5.0E-08	5.1E-08
1,2-Diphenylhydrazine ^c	0	--	--	3.6E-01	2.0E+00	--	--	3.6E-01	2.0E+00	--	--	--	--	--	--	--	--	--	--	3.6E-01	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	2.2E-01	5.6E-02	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	6.2E+01	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	6.2E+01	8.9E+01	--	--	6.2E+01	8.9E+01	--	--	--	--	--	--	--	--	--	--	6.2E+01	8.9E+01
Endrin	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	8.6E-02	3.6E-02	5.9E-02	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	5.9E-02	6.0E-02
Endrin Aldehyde	0	--	--	2.9E-01	3.0E-01	--	--	2.9E-01	3.0E-01	--	--	--	--	--	--	--	--	--	--	2.9E-01	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	5.3E+02	2.1E+03	--	--	5.3E+02	2.1E+03	--	--	--	--	--	--	--	--	--	--	5.3E+02	2.1E+03
Fluoranthene	0	--	--	1.3E+02	1.4E+02	--	--	1.3E+02	1.4E+02	--	--	--	--	--	--	--	--	--	--	1.3E+02	1.4E+02
Fluorene	0	--	--	1.1E+03	5.3E+03	--	--	1.1E+03	5.3E+03	--	--	--	--	--	--	--	--	--	--	1.1E+03	5.3E+03
Foaming Agents	0	--	--	5.0E+02	--	--	--	5.0E+02	--	--	--	--	--	--	--	--	--	--	--	5.0E+02	--
Guthion	0	--	1.0E-02	--	--	--	1.0E-02	--	--	--	--	--	--	--	--	--	--	--	1.0E-02	--	--
Heptachlor ^C	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	5.2E-01	3.8E-03	7.9E-04	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	7.9E-04	7.9E-04
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	5.2E-01	3.8E-03	3.9E-04	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	3.9E-04	3.9E-04
Hexachlorobenzene ^C	0	--	--	2.8E-03	2.9E-03	--	--	2.8E-03	2.9E-03	--	--	--	--	--	--	--	--	--	--	2.8E-03	2.9E-03
Hexachlorobutadiene ^C	0	--	--	4.4E+00	1.8E+02	--	--	4.4E+00	1.8E+02	--	--	--	--	--	--	--	--	--	--	4.4E+00	1.8E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	2.6E-02	4.9E-02	--	--	2.6E-02	4.9E-02	--	--	--	--	--	--	--	--	--	--	2.6E-02	4.9E-02
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	9.1E-02	1.7E-01	--	--	9.1E-02	1.7E-01	--	--	--	--	--	--	--	--	--	--	9.1E-02	1.7E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	--	9.8E-01	1.8E+00	9.5E-01	--	9.8E-01	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	9.8E-01	1.8E+00
Hexachlorocyclopentadiene	0	--	--	4.0E+01	1.1E+03	--	--	4.0E+01	1.1E+03	--	--	--	--	--	--	--	--	--	--	4.0E+01	1.1E+03
Hexachloroethane ^C	0	--	--	1.4E+01	3.3E+01	--	--	1.4E+01	3.3E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	--	--	--	2.0E+00	--	--	--	--	--	--	--	--	--	--	--	2.0E+00	--	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	3.8E-02	1.8E-01	--	--	3.8E-02	1.8E-01	--	--	--	--	--	--	--	--	--	--	3.8E-02	1.8E-01
Iron	0	--	--	3.0E+02	--	--	--	3.0E+02	--	--	--	--	--	--	--	--	--	--	--	3.0E+02	--
Isophorone ^C	0	--	--	3.5E+02	9.6E+03	--	--	3.5E+02	9.6E+03	--	--	--	--	--	--	--	--	--	--	3.5E+02	9.6E+03
Kepon	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Lead	0	4.9E+01	5.6E+00	1.5E+01	--	4.9E+01	5.6E+00	1.5E+01	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	1.5E+01	--
Malathion	0	--	1.0E-01	--	--	--	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	1.0E-01	--	--
Manganese	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	4.7E+01	1.5E+03	--	--	4.7E+01	1.5E+03	--	--	--	--	--	--	--	--	--	--	4.7E+01	1.5E+03
Methylene Chloride ^C	0	--	--	4.6E+01	5.9E+03	--	--	4.6E+01	5.9E+03	--	--	--	--	--	--	--	--	--	--	4.6E+01	5.9E+03
Methoxychlor	0	--	3.0E-02	1.0E+02	--	--	3.0E-02	1.0E+02	--	--	--	--	--	--	--	--	--	--	3.0E-02	1.0E+02	--
Mirex	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	--	--	--	--	--	--	--	--	0.0E+00	--	--
Nickel	0	1.0E+02	1.1E+01	6.1E+02	4.6E+03	1.0E+02	1.1E+01	6.1E+02	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	6.1E+02	4.6E+03
Nitrate (as N)	0	--	--	1.0E+04	--	--	--	1.0E+04	--	--	--	--	--	--	--	--	--	--	--	1.0E+04	--
Nitrobenzene	0	--	--	1.7E+01	6.9E+02	--	--	1.7E+01	6.9E+02	--	--	--	--	--	--	--	--	--	--	1.7E+01	6.9E+02
N-Nitrosodimethylamine ^C	0	--	--	6.9E-03	3.0E+01	--	--	6.9E-03	3.0E+01	--	--	--	--	--	--	--	--	--	--	6.9E-03	3.0E+01
N-Nitrosodiphenylamine ^C	0	--	--	3.3E+01	6.0E+01	--	--	3.3E+01	6.0E+01	--	--	--	--	--	--	--	--	--	--	3.3E+01	6.0E+01
N-Nitrosodi-n-propylamine ^C	0	--	--	5.0E-02	5.1E+00	--	--	5.0E-02	5.1E+00	--	--	--	--	--	--	--	--	--	--	5.0E-02	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	--	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	--	--
Parathion	0	6.5E-02	1.3E-02	--	--	6.5E-02	1.3E-02	--	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	--	--
PCB Total ^C	0	--	1.4E-02	6.4E-04	6.4E-04	--	1.4E-02	6.4E-04	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	6.4E-04	6.4E-04
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	2.7E+00	3.0E+01	7.7E-03	5.9E-03	2.7E+00	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	2.7E+00	3.0E+01
Phenol	0	--	--	1.0E+04	8.6E+05	--	--	1.0E+04	8.6E+05	--	--	--	--	--	--	--	--	--	--	1.0E+04	8.6E+05
Pyrene	0	--	--	8.3E+02	4.0E+03	--	--	8.3E+02	4.0E+03	--	--	--	--	--	--	--	--	--	--	8.3E+02	4.0E+03
Radionuclides	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gross Alpha Activity (pCi/L)	0	--	--	1.5E+01	--	--	--	1.5E+01	--	--	--	--	--	--	--	--	--	--	--	1.5E+01	--
Beta and Photon Activity (mrem/yr)	0	--	--	4.0E+00	--	--	--	4.0E+00	--	--	--	--	--	--	--	--	--	--	--	4.0E+00	--
Radium 226 + 228 (pCi/L)	0	--	--	5.0E+00	--	--	--	5.0E+00	--	--	--	--	--	--	--	--	--	--	--	5.0E+00	--
Uranium (ug/l)	0	--	--	3.0E+01	--	--	--	3.0E+01	--	--	--	--	--	--	--	--	--	--	--	3.0E+01	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	2.0E+01	5.0E+00	1.7E+02	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	1.7E+02	4.2E+03
Silver	0	1.0E+00	--	--	--	1.0E+00	--	--	--	--	--	--	--	--	--	--	--	1.0E+00	--	--	--
Sulfate	0	--	--	2.5E+05	--	--	--	2.5E+05	--	--	--	--	--	--	--	--	--	--	--	2.5E+05	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	1.7E+00	4.0E+01	--	--	1.7E+00	4.0E+01	--	--	--	--	--	--	--	--	--	--	1.7E+00	4.0E+01
Tetrachloroethylene ^C	0	--	--	6.9E+00	3.3E+01	--	--	6.9E+00	3.3E+01	--	--	--	--	--	--	--	--	--	--	6.9E+00	3.3E+01
Thallium	0	--	--	2.4E-01	4.7E-01	--	--	2.4E-01	4.7E-01	--	--	--	--	--	--	--	--	--	--	2.4E-01	4.7E-01
Toluene	0	--	--	5.1E+02	6.0E+03	--	--	5.1E+02	6.0E+03	--	--	--	--	--	--	--	--	--	--	5.1E+02	6.0E+03
Total dissolved solids	0	--	--	5.0E+05	--	--	--	5.0E+05	--	--	--	--	--	--	--	--	--	--	--	5.0E+05	--
Toxaphene ^C	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	7.3E-01	2.0E-04	2.8E-03	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	2.8E-03	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	--	--	4.6E-01	7.2E-02	--	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	--	--
1,2,4-Trichlorobenzene	0	--	--	3.5E+01	7.0E+01	--	--	3.5E+01	7.0E+01	--	--	--	--	--	--	--	--	--	--	3.5E+01	7.0E+01
1,1,2-Trichloroethane ^C	0	--	--	5.9E+00	1.6E+02	--	--	5.9E+00	1.6E+02	--	--	--	--	--	--	--	--	--	--	5.9E+00	1.6E+02
Trichloroethylene ^C	0	--	--	2.5E+01	3.0E+02	--	--	2.5E+01	3.0E+02	--	--	--	--	--	--	--	--	--	--	2.5E+01	3.0E+02
2,4,6-Trichlorophenol ^C	0	--	--	1.4E+01	2.4E+01	--	--	1.4E+01	2.4E+01	--	--	--	--	--	--	--	--	--	--	1.4E+01	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	5.0E+01	--	--	--	--	--	--	--	--	--	--	--	5.0E+01	--
Vinyl Chloride ^C	0	--	--	2.5E-01	2.4E+01	--	--	2.5E-01	2.4E+01	--	--	--	--	--	--	--	--	--	--	2.5E-01	2.4E+01
Zinc	0	6.5E+01	6.6E+01	7.4E+03	2.6E+04	6.5E+01	6.6E+01	7.4E+03	2.6E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	7.4E+03	2.6E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = $(0.25(WQC - \text{background conc.}) + \text{background conc.})$ for acute and chronic
= $(0.1(WQC - \text{background conc.}) + \text{background conc.})$ for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	5.6E+00
Arsenic	1.0E+01
Barium	2.0E+03
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	3.0E+02
Lead	3.4E+00
Manganese	5.0E+01
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

12/15/2015 8:26:49 AM

Facility = Camp Upshur STP
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 8.41
WLAc = 1.24
Q.L. = .2
samples/mo. = 12
samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average = 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 2.50191091583623
Average Weekly limit = 1.83000697715366
Average Monthly Limit = 1.36311600760039

The data are:

Camp Upshur STP (VA0028371)
Total Recoverable Copper (Apr 2011 -- Nov 2015)

Due	Concentration Average	Limit Average	Concentration Maximum	Limit Maximum
10-May-11	<QL	29	<QL	29
10-May-11	<QL	29	<QL	29
10-Jun-11	<QL	29	<QL	29
10-Jul-11	<QL	29	<QL	29
10-Aug-11	<QL	29	<QL	29
10-Sep-11	<QL	29	<QL	29
10-Oct-11	11	29	11	29
10-Nov-11	<QL	29	<QL	29
10-Dec-11	<QL	29	<QL	29
10-Jan-12	11	29	11	29
10-Feb-12	<QL	29	<QL	29
10-Mar-12	<QL	29	<QL	29
10-Apr-12	<QL	29	<QL	29
10-May-12	<QL	29	<QL	29
10-Jun-12	14	29	14	29
10-Jul-12	<QL	29	<QL	29
10-Aug-12	13	29	13	29
10-Sep-12	13	29	13	29
10-Oct-12	<QL	29	<QL	29
10-Nov-12	<QL	29	<QL	29
10-Dec-12	11	29	11	29
10-Jan-13	12	29	12	29
10-Feb-13	11	29	11	29
10-Mar-13	11	29	11	29
10-Apr-13	<QL	29	<QL	29
10-May-13	<QL	29	<QL	29
10-Jun-13	<QL	29	<QL	29
10-Jul-13	<QL	29	<QL	29
10-Aug-13	<QL	29	<QL	29
10-Sep-13	<QL	29	<QL	29
10-Oct-13	12	29	12	29
10-Nov-13	14	29	14	29
10-Dec-13	<QL	29	<QL	29
10-Jan-14	20	29	20	29
10-Feb-14	15	29	15	29
10-Mar-14	<QL	29	<QL	29
10-Apr-14	<QL	29	<QL	29
10-May-14	<QL	29	<QL	29
10-Jun-14	<QL	29	<QL	29
10-Jul-14	<QL	29	<QL	29
10-Aug-14	12	29	12	29
10-Sep-14	18	29	18	29
10-Oct-14	15	29	15	29
10-Nov-14	14	29	14	29
10-Dec-14	16	29	16	29
10-Jan-15	13	29	13	29
10-Feb-15	<QL	29	<QL	29
10-Mar-15	12	29	12	29
10-Apr-15	12	29	12	29
10-May-15	11	29	11	29
10-Jun-15	<QL	29	<QL	29
10-Jul-15	<QL	29	<QL	29
10-Aug-15	18	29	18	29
10-Sep-15	<QL	29	<QL	29
10-Oct-15	0	29	0	29
10-Nov-15	15	29	15	29
10-Dec-15	0	29	0	29

Camp Upshur STP (VA0028371)
Total Recoverable Nickel (Apr 2011 – Nov 2015)

Due	Concentration Average	Limit Average	Concentration Maximum	Limit Maximum
10-May-11	<QL	360	<QL	360
10-May-11	<QL	360	<QL	360
10-Jun-11	<QL	360	<QL	360
10-Jul-11	<QL	360	<QL	360
10-Aug-11	<QL	360	<QL	360
10-Sep-11	<QL	360	<QL	360
10-Oct-11	<QL	360	<QL	360
10-Nov-11	<QL	360	<QL	360
10-Dec-11	<QL	360	<QL	360
10-Jan-12	<QL	360	<QL	360
10-Feb-12	<QL	360	<QL	360
10-Mar-12	<QL	360	<QL	360
10-Apr-12	<QL	360	<QL	360
10-May-12	<QL	360	<QL	360
10-Jun-12	<QL	360	<QL	360
10-Jul-12	<QL	360	<QL	360
10-Aug-12	<QL	360	<QL	360
10-Sep-12	<QL	360	<QL	360
10-Oct-12	<QL	360	<QL	360
10-Nov-12	<QL	360	<QL	360
10-Dec-12	<QL	360	<QL	360
10-Jan-13	<QL	360	<QL	360
10-Feb-13	<QL	360	<QL	360
10-Mar-13	<QL	360	<QL	360
10-Apr-13	<QL	360	<QL	360
10-May-13	<QL	360	<QL	360
10-Jun-13	<QL	360	<QL	360
10-Jul-13	<QL	360	<QL	360
10-Aug-13	<QL	360	<QL	360
10-Sep-13	<QL	360	<QL	360
10-Oct-13	<QL	360	<QL	360
10-Nov-13	<QL	360	<QL	360
10-Dec-13	<QL	360	<QL	360
10-Jan-14	<QL	360	<QL	360
10-Feb-14	<QL	360	<QL	360
10-Mar-14	<QL	360	<QL	360
10-Apr-14	<QL	360	<QL	360
10-May-14	<QL	360	<QL	360
10-Jun-14	<QL	360	<QL	360
10-Jul-14	<QL	360	<QL	360
10-Aug-14	<QL	360	<QL	360
10-Sep-14	<QL	360	<QL	360
10-Oct-14	<QL	360	<QL	360
10-Nov-14	<QL	360	<QL	360
10-Dec-14	<QL	360	<QL	360
10-Jan-15	<QL	360	<QL	360
10-Feb-15	<QL	360	<QL	360
10-Mar-15	<QL	360	<QL	360
10-Apr-15	<QL	360	<QL	360
10-May-15	<QL	360	<QL	360
10-Jun-15	<QL	360	<QL	360
10-Jul-15	<QL	360	<QL	360
10-Aug-15	0	360	0	360
10-Sep-15	<QL	360	<QL	360
10-Oct-15	0	360	0	360
10-Nov-15	0	360	0	360
10-Dec-15	0	360	0	360

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Prince William County, Virginia.

PUBLIC COMMENT PERIOD: July 11, 2016 to August 10, 2016

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board.

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: U.S. Marine Corps – MCB Quantico
Commander, MCB Quantico
c/o NREA (B046)
3250 Catlin Avenue
Quantico, VA 22134-5001
VA0028371

NAME AND ADDRESS OF FACILITY: Camp Upshur Sewage Treatment Plant
MCB Quantico
Camp Upshur Building 2666
Prince William County, VA 22134

PROJECT DESCRIPTION: The U.S. Marine Corps – MCB Quantico has applied for reissuance of a permit for the Federal Camp Upshur Sewage Treatment Plant. The applicant proposes to release treated sewage wastewaters from this facility at a rate of 0.14 million gallons per day into an unnamed tributary of Cedar Run in Prince William County in the Potomac River Watershed. A watershed is the land area drained by a river and its incoming streams. Sludge from the treatment process will be disposed of at the Quantico Mainside Sewage Treatment Plant. The permit will limit the following pollutants to amounts that protect water quality: pH, biochemical oxygen demand-5 day, total suspended solids, dissolved oxygen, ammonia as nitrogen, *E. coli* bacteria, Total Recoverable Nickel and Total Recoverable Copper. Additionally, the permit shall require monitoring for nitrite+nitrate, total Kjeldahl nitrogen, total nitrogen, total phosphorus, and hardness.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Anna T. Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov